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Analysis of the patients who applied to the covid emergency polyclinic in the Cappadocia region

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ABSTRACT

Aims: To perform a retrospective analysis of patients who applied to the covid emergency department of a pandemic hospital within one year.

Methods: Patients who applied to the hospital-wide and covid emergency unit between 01.01.2021 and 31.12.2021 in a pandemic hospital were evaluated retrospectively through hospital electronic data. The time of admission, age range, tomography scan rate, and hospitalization rates were evaluated. In the statistical analysis, descriptive analyzes were performed using the Statistical Package for Social Sciences for Windows 21.0 (SPSS 21.0) program.

Results: 9% of hospital admissions were made from the covid emergency area. 96.3% of the cases were citizens of the Republic of Türkiye. The female patient admission rate was 52.4%, which was higher than that of males. The highest number of applicants was between the ages of 18-65 (79.5%). While the highest number of applications in terms of months was in September (17.1%), the highest number of applications was between 08.00-16.00 (58.5%) in terms of hours. The tomography rate was 9.1%. 2% of hospitalizations were made to the ward and 0.4% to the intensive care unit.

Conclusion: During the epidemic period, the way of patient management and patient's application rates may vary in hospitals and emergency services. During the epidemic, the number of patients fluctuates in the process and there may be differences in age groups. In all kinds of epidemics, it is thought that the data obtained in the past epidemics can guide the reorganization of hospital emergency services.

Keywords: COVID -19, emergency service, pandemic

INTRODUCTION

The coronavirus disease (Covid-19) emerged in December 2019 in Wuhan, China, as a new disease caused by the SARS-CoV-2 virus.[1] The disease spread rapidly around the world and was classified as a pandemic by the World Health Organization (WHO) on March 11, 2020.[2] In Turkey, the first case was announced on March 10, 2020 by the Republic of Turkey, Ministry of Health. After this process, many hospitals across the country were designated as pandemic hospitals.[3] After the first case was detected in Turkey and Covid-19 was declared a pandemic in the worldwide, measures were taken to prevent the spread of the virus. Among these measures, regulations regarding patient admission to the pandemic hospitals were also included.[4] Pandemic polyclinics were established in a separate area from the emergency services, and cases with suspected Covid-19 were directed to the these pandemic outpatient clinics.[5]

In this study, we aimed to make a statistical analysis of the patients who applied to the "covid emergency" department of a secondary level pandemic hospital within one year.

METHODS

After obtaining the decision of Hacı Bektaş Veli University Ethics Committee (dated 28.12.2021 and numbered 462); the study was conducted retrospectively in a secondary care hospital between 01.01.2021-31.12.2021 by analyzing the number of hospital-wide admissions and screening the patients admitted to the covid emergency department area through hospital electronic data. All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki.

Patients in all age groups who applied to the Covid emergency department for examination and coronavirus test were included in the study. The numbers of patients who are Turkish citizens and foreign nationals were analyzed. The date and time of admission, age range, gender, and rate of thoracic tomography scan were evaluated in the patients. In patient clinic and intensive care hospitalization rates of hospitalized patients were evaluated. The number of patients referred to an external health center was evaluated. Cases that

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resulted in death in the emergency department were excluded from the study.

Statistical Package for Social Sciences for Windows 21.0 (SPSS 21.0) program was used to analyze the data. Descriptive statistics (frequency, percentage distribution) were used as statistical analysis. Results are given as mean ± SD, or frequency (percent).

RESULTS

In the hospital where this study was conducted, annual examination applications were 1375325, while 9% of the applications (124874 applications) were made from the 'covid emergency' application area. While 120277 (96.3%) of the patients who applied from the Covid emergency area were citizens of the Republic of Turkey, 4507 (3.6%) of the patients were foreign nationals. 52.4% of the patients were female. When the classification of the applications according to the age range is examined, the number of patients aged 18 and under was 14509 (11.6%), the number of patients between the ages of 18-65 was 99271 (79.5%), and the number of patients over the age of 65 was 11004 (8.8%) found. Considering the application season of the patients during the year, it was seen that the highest number of applications was in September with 21355 (17.1%) patients, and the least application was in February with 3543 (2.8%) patients. The distribution of hospital-wide applications and covid emergency applications during the year is given in detail in graph1. According to the graph, it is seen that there was a sudden increase in covid emergency applications in April and then there was a sudden decrease. The application hours of the patients to the covid emergency area were examined in 3 different time periods and the results were highest number of applications between was 08.00-16.00 (58.5%) and the least application was between 24.00-08.00 (1.3%). In the other time interval is between 16.00-24.00, the application rate was 40%. Also, it was seen that 71.5% of the applications were on weekdays. Thoracic tomography imaging was performed in 11384 of the admitted patients. According to this data, it is seen that 9.1% of the patients evaluated in the covid emergency area had a tomography scan. When the patients were evaluated according to the final outcome in the emergency department, 2061 (2%) patients were hospitalized in the service and 586 (0.4%) patients in the intensive care unit for treatment. 37 patients (0.02%) were referred to another health institution due to hospital intensive care occupancy. When evaluated according to months, the highest number of patients admitted to the ward was in April with 348 (13.3%) and the highest number of admissions to the intensive care unit was in September (16.8%) with 99 patients. The distribution of patients admitted to the Covid emergency area by months is given in **Table 1** in detail.

DISCUSSION

The Covid-19 pandemic is a major health emergency that affects the behavior of the entire population, both personally and socially.[6] In our study, it is seen that 96.3% of the applications from the covid emergency area are citizens of the republic of Turkey, while it is seen that there are foreign patients with a rate of 3.6%. In the study conducted by Şahin et al.[7], it was observed that 0.6% of the patients receiving inpatient treatment in the hospital were foreign nationals. In a similar study by Çatal et al.[8], 4.3% of the patients were foreign nationals. It is thought that immigrants are more helpless about the implementation of necessary measures during the pandemic period. At the same time, determinants such as socioeconomic level and legal status may restrict immigrants's access to health services In this study, the number of foreign patients was low. According to these results, it can be interpreted that immigrants have high access to health services in Turkey. However, more detailed research can be done on the subject in order to reach more accurate results. In our study, 124784 patients applied to the covid emergency area in one year, which is 9% of the total number of hospital admissions. In a similar study, the rate of admission to the pandemic area among emergency room patients was evaluated as 7.6%. In this study, 52.4% of the patients who applied to the covid emergency area were women. In their study, Çatal et al.[7] reported that 54.6% of the cases were male.In another study, 50.9% of patients were male.[9] In the study of Özdemir et al, the rate of male patients was reported as 58%.[10] In a study conducted in the emergency department, 53% of the patients who applied were women.[11] There were no significant gender differences between studies, and we think that it may vary according to the region of study.

In this study, the rate of application among the 18-65 age group is 79.5%. The rate of patients over 65 years of age is 8.8%. In a similar study, the rate of application for those aged 18-65 was 67.9% and for those over 65 years old was 6.9%.[7] In some studies, it is emphasized that there is a decrease in emergency service applications, especially over the age of

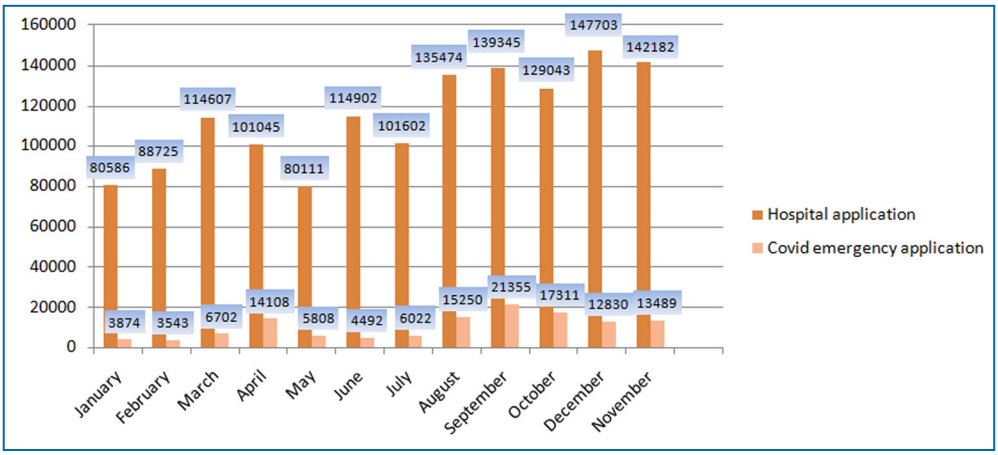

Figure 1. Analysis of the number of patients admitted to the hospital and covid emergency department by month

Table 1. The distribution of patients admitted to the Covid emergency area by months

	January		February		March		April	
	n	%	n	%	n	%	n	%
Nationality								
T.C.*	3774	97.4	3436	96.9	6528	97.4	13821	97.9
Foreign	100	2.6	107	3.1	174	2.6	287	2.1
Gender								
Male	1903	49.1	1740	49.1	3167	47.2	7006	49.6
Female	1971	50.9	1803	50.9	3535	58.8	7102	50.4
Age								
<18	94	2.4	145	4.0	521	7.8	676	4.7
18-65	3194	82.4	2849	80.4	5425	80.9	12091	85.7
>65	586	15.2	549	15.6	756	11.3	1341	9.6
Application time								
08:00-16:00	2421	62.5	2260	63.8	4147	61.9	8510	60.3
16:00-24:00	1370	35.4	1201	33.9	2451	36.6	5383	38.2
24:00-08:00	83	2.1	82	2.3	104	1.5	215	1.5
Hospitalization service	196	5.0	147	4.1	187	2.8	348	2.5
intensive care	48	1.2	30	0.8	37	0.6	62	0.4

	May		June		July		August	
	%	n	%	n	%	n	%	n	%
Nationality								
T.C.*	97.9	5604	96.4	4218	93.9	5647	93.7	14468	94.8
Foreign	2.1	204	3.6	274	6.1	375	6.3	782	5.2
Gender									
Male	49.6	2678	46.1	2115	47.0	2834	47.0	7075	46.3
Female	50.4	3130	53.9	2377	53.0	3188	53.0	8175	53.7
Age									
<18	4.7	229	3.5	300	6.7	520	8.6	1761	11.5
18-65	85.7	4920	75.8	3644	81.1	4906	81.5	12082	79.2
>65	9.6	1341	20.7	548	12.2	596	9.9	1407	9.3
Application time									
08:00-16:00	60.3	3431	59.0	2767	60.7	3433	57.0	8749	57.4
16:00-24:00	38.2	2229	38.4	1639	36.0	2467	41.0	6219	40.8
24:00-08:00	1.5	148	2.6	148	3.3	122	2.0	282	1.8
Hospitalization service	2.5	228	3.9	112	2.5	118	2.0	302	2.0
intensive care	0.4	29	0.5	22	0.5	27	0.4	78	0.5

	September		October		November		December	
	n	%	n	%	n	%	n	%
Nationality								
T.C.*	20670	96.7	16719	96.5	12375	96.4	13017	96.5
Foreign	685	3.3	592	3.5	455	3.6	472	3.5
Gender								
Male	9925	46.4	8022	46.3	6242	48.6	6671	49.4
Female	11430	53.6	9289	53.7	6588	51.4	6818	50.6
Age								
<18	3125	14.6	3323	19.2	1858	14.5	1957	14.5
18-65	16821	78.8	12847	74.2	9937	77.5	10555	78.2
>65	1409	6.6	1141	6.6	1035	8.0	977	7.3
Application time								
08:00-16:00	11907	55.8	10087	58.3	7694	60.0	7690	57.0
16:00-24:00	9211	43.1	7074	40.9	5024	39.2	5693	42.2
24:00-08:00	237	1.1	150	0.8	112	0.8	106	0.8
Hospitalization service	331	1.5	263	1.5	200	1.6	149	1.1
intensive care	99	0.5	54	0.3	56	0.4	44	0.3

*Turkish Republic

65, with the emergence of the covid-19 pandemic.[7,12,13] In addition, Çatal et al.[7] In their study, they observed that the number of applications decreased mostly among the 0-17 age group (80.5%). In one study, the rate of application between the ages of 18-60 was stated as 77.9%.[11] During the pandemic period, the fact that parents did not take their children to health institutions in order to protect them from the disease may have been effective in the decrease in the number of applications, especially in the child age group. At the same time, it can be thought that the curfews of the patient group over 65 years of age and the fear of the disease being more mortal in the elderly may be effective in reducing hospital admissions.

In our study during the analysis by months, it was observed that there was a rapid increase in the number of cases in April. Afterwards, it was observed that there were high number of patient admissions starting from August until December. Catal et al.[7] In their study, they did not see seasonal differences between patient admissions before the pandemic. However, there has been an increase in the number of applications in the autumn period of 2020. Yakar et al.[11] In their study, they compared between 2019 and 2020, and while the number of emergency service applications was higher in the summer months before the pandemic, the outpatient clinic applications decreased with the onset of the pandemic, and the emergency service applications increased rapidly in April and May. In the process of the pandemic, there has been a rapid decrease and increase in patient applications due to the mutation of the virus in some periods and the effect of vaccination studies. For this reason, it may not have been foreseen that the disease will increase especially in certain seasons or months.

During the Covid-19 pandemic process, curfews have also affected the number of emergency service applications. In our study, while the minimum number of applications was between 24.00-08.00 (1.3%), the highest number of applications was between 08.00-16.00. In a similar study, the rate of emergency service application between 08:00 and 20:00 was 66%.[11]

Since the PCR (polymeraz chain reaction) test can be negative in the early period in cases of Covid- 19 pneumonia, thorax CT is used as an important diagnostic method.[14,15] Computed tomography has a high sensitivity (91.9% [89.8-93.7%]) and low specificity (25.1% [21.0-29.5%]) in diagnosing the disease. It can make important contributions to the diagnosis in cases where the PCR test is negative and the chest radiography is normal.[16] In our study, lung tomography was performed on 11384 (9.1%) patients.

In order to prevent the spread of the disease during the pandemic process and to regulate the treatment of patients diagnosed with coronavirus disease, hospitalization was restricted for patients who do not have an emergency in hospitals. During the period of the study, 2061 patients were hospitalized in the ward, 586 patients in the intensive care unit, and 37 patients were transferred to another health center due to bed occupancy. In a similar study, 307 patients were hospitalized with the diagnosis of covid-19 in 2020.[17] In another study, 372 patients were hospitalized with the diagnosis of covid-19 in one year.[9] In a study, comparisons were made between the mortal and non-mortal patient groups of 499 patients hospitalized with the diagnosis of covid-19.[18] In another study, 407 patients diagnosed with covid-19 in a 3-month period were hospitalized and analyzed.[19] It is seen that there are variable rates of hospitalizations in different studies. We think that the reason for this is the increase in the process of the disease and the difference in the number of pandemic hospitals in the region in studies conducted in different regions and times.

CONCLUSION

As a result, considering the workload of the emergency services, new work plans should be prepared by evaluating

the data in the literature in order to detect the disruptions that may occur in extraordinary situations such as epidemics and pandemics.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was initiated with the approval of the Nevşehir Hacı Bektaş University Medical Faculty Clinical Researches Ethics Committee (Date: 08.07.2021, Decision No: 2021.07.09).

Informed Consent: Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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